AL. I. 1298

CANADIANA

FEB 21 1990

GRADE 12 DIPLOMA EXAMINATION

Mathematics 30

January 1990

Alberta
EDUCATION

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GRADE 12 DIPLOMA EXAMINATION
MATHEMATICS 30

DESCRIPTION

Time: 2½ hours

Total possible marks: 65

This is a **closed-book** examination consisting of **three** parts:

PART A has 40 multiple-choice questions each with a value of one mark.

PART B has 12 machine-scorable open-ended questions each with a value of one mark.

PART C has three written-response questions for a total of 13 marks.

A tear-out formula and z-score page is included in this booklet.

NOTE: The perforated pages at the back of this booklet may be torn out and used for your rough work. **No marks** will be given for work done on the tear-out pages.

GENERAL INSTRUCTIONS

Fill in the information required on the answer sheet and the examination booklet as directed by the examiner.

You are expected to provide your own approved scientific calculator.

Carefully read the instructions for each part before proceeding.

DO NOT FOLD EITHER THE ANSWER SHEET OR THE EXAMINATION BOOKLET.

The presiding examiner will collect your answer sheet and examination booklet and send them to Alberta Education.

JANUARY 1990

PART A

INSTRUCTIONS

In this part of the examination, there are 40 multiple-choice questions each with a value of one mark. All numbers used in the questions are to be considered as **exact** numbers and are not the result of a measurement.

Read each question carefully and decide which of the choices **best** completes the statement or answers the question. Locate that question number on the separate answer sheet provided and fill in the space that corresponds to your choice. **Use an HB pencil only.**

Example

This diploma examination is for the subject area of

A. Biology
B. Physics
C. Chemistry
D. Mathematics

Answer Sheet

A	B	C	D
①	②	③	●

If you wish to change an answer, erase your first mark completely.

NOTE: The perforated pages at the back of this booklet may be torn out and used for your rough work. **No marks** will be given for work done on the tear-out pages.

DO NOT TURN THE PAGE TO START THE EXAMINATION UNTIL TOLD TO DO SO BY THE PRESIDING EXAMINER.

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1. In ΔABC, $\angle B = 118°$, $b = 32.6$ cm, and $a = 16.3$ cm. The measure of $\angle C$ correct to the nearest tenth of a degree is

A. $63.8°$

B. $54.2°$

C. $35.8°$

D. $26.2°$

2. An angle of $340°$ expressed in radians is

A. $\frac{9\pi}{17}$ rad

B. $\frac{17\pi}{9}$ rad

C. $\frac{9}{17\pi}$ rad

D. $\frac{17}{9\pi}$ rad

3. If $\tan\theta = 0.6$, then $\sec^2\theta$ is

A. 1.60
B. 1.36
C. 1.17
D. 0.64

4. If $2\sin\theta + 1 = 0, 0 \leqq \theta < 2\pi$, then θ is equal to

A. $\frac{\pi}{6}, \frac{5\pi}{6}$

B. $\frac{\pi}{6}, \frac{11\pi}{6}$

C. $\frac{5\pi}{6}, \frac{7\pi}{6}$

D. $\frac{7\pi}{6}, \frac{11\pi}{6}$

5. If $\sin\theta = \frac{a}{b}$ and $\cos\theta = \frac{c}{d}$, then $\tan\theta$ is

A. $\frac{ac}{bd}$

B. $\frac{ad}{bc}$

C. $\frac{bc}{ad}$

D. $\frac{bd}{ac}$

6. In ΔPQR, $PQ = 17$ cm, $QR = 80$ cm, and $PR = 73$ cm. The measure of $\angle PQR$ correct to the nearest degree is

A. 48°

B. 50°

C. 60°

D. 68°

7. An angle θ is in standard position. A circle centred on the origin intersects the arms of the angle at a point on the x-axis and at a point $P(a, b)$. The value of $\sec\theta$ is given by

A. $\frac{\sqrt{a^2 + b^2}}{a}$

B. $\frac{\sqrt{a^2 + b^2}}{b}$

C. $\frac{a}{b}$

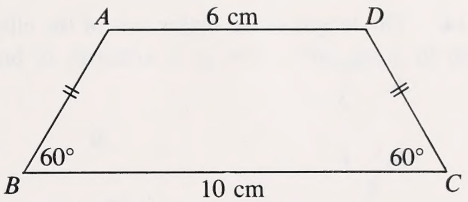
D. $\frac{b}{a}$

8. A ladder 300 cm long makes an angle of 60° with the ground, when leaning against a vertical wall. Correct to the nearest centimetre, how much closer to the wall will the foot of the ladder be if the angle with the ground is increased to 65°?

A. 127 cm
B. 120 cm
C. 30 cm
D. 23 cm

9. The perimeter of trapezoid *ABCD* shown at the right is

A. 20 cm
B. 22 cm
C. 24 cm
D. 32 cm



10. The point $P(6, 8)$ is on the circle $(x - 2)^2 + (y - 6)^2 = 20$, and PQ is a diameter of this circle. The co-ordinates of Q are

A. $x = 4;\ y = 7$
B. $x = 4;\ y = 4$
C. $x = -2;\ y = 7$
D. $x = -2;\ y = 4$

11. An equation of an ellipse with vertices at $(0, \pm 4)$ and foci at $(0, \pm 2)$ is

A. $\frac{x^2}{16} + \frac{y^2}{12} = 1$

B. $\frac{x^2}{16} + \frac{y^2}{20} = 1$

C. $\frac{x^2}{12} + \frac{y^2}{16} = 1$

D. $\frac{x^2}{4} + \frac{y^2}{16} = 1$

12. A parabola is the set of points that are equidistant from a fixed line and a fixed point not on the line. The fixed line is called the

A. directrix
B. asymptote
C. focal radius
D. axis of symmetry

13. For the ellipse $5x^2 + 9y^2 - 180 = 0$, one focus is at

A. $(0, 4)$

B. $(4, 0)$

C. $(0, 2\sqrt{14})$

D. $(2\sqrt{14}, 0)$

14. The length of the major axis of the ellipse $4x^2 + 9y^2 = 1$ is

A. $\frac{2}{3}$

B. 1

C. 4

D. 6

15. A conic has foci at $(\pm 5, 0)$ and the difference of its focal radii is always 8. An equation of the conic is

A. $9x^2 + 16y^2 = 144$

B. $9x^2 - 16y^2 = 144$

C. $16x^2 - 9y^2 = 144$

D. $16x^2 + 9y^2 = 144$

16. An elliptical rug is placed in a rectangular room with dimensions 4.0 m by 3.2 m. If the rug touches the midpoint of each wall, the distance between the centre of the room and one focus of the rug is

A. 2.6 m
B. 2.4 m
C. 1.2 m
D. 0.8 m

17. For the parabola $(x - 1)^2 = 4(y - 2)$, the directrix is

A. $y = 1$
B. $y = -3$
C. $x = 0$
D. $x = -2$

18. A circle with a radius of 4 units is centred at $(3, -5)$. An equation of the circle is

A. $x^2 - 6x + y^2 + 10y + 18 = 0$

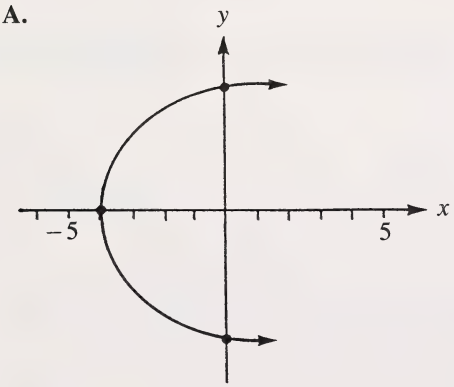
B. $x^2 + 6x + y^2 - 10y + 18 = 0$

C. $x^2 - 6x + y^2 + 10y + 30 = 0$

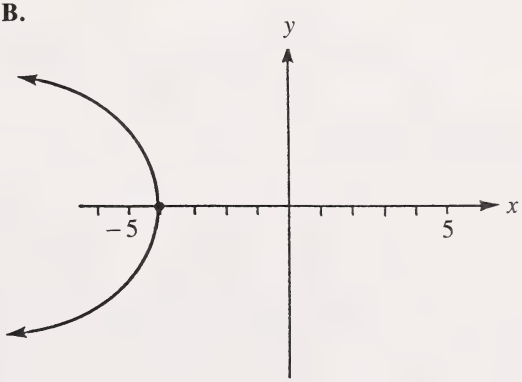
D. $x^2 + 6x + y^2 - 10y + 30 = 0$

19. A parabola has its focus at $(-4, 0)$ and its directrix is $x = 2$. The graph of this parabola is

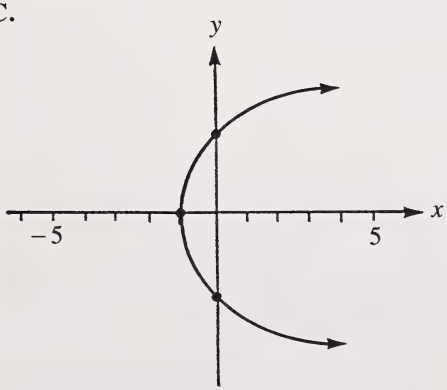
A.



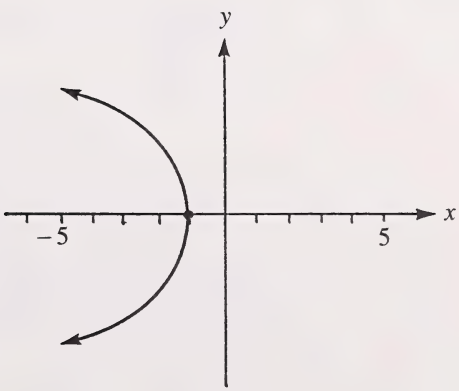
B.



C.



D.



20. A point $P(16, y)$ is on an asymptote of the hyperbola $\frac{x^2}{16} - \frac{y^2}{49} = 1$. The value of y is

A. ± 7

B. $\pm \frac{64}{7}$

C. ± 28

D. ± 49

21. If the first term of an arithmetic sequence is $5x$ and the common difference is $2x$, an expression for the general term, t_n, is

A. $\frac{7nx}{2}$

B. $3x + 2nx$

C. $5nx - 3x$

D. $(5x)(2x)^{n-1}$

22. The sum of the series described by $\sum_{n=40}^{55} (2n - 20)$ is

A. 4125
B. 1980
C. 1200
D. 1125

23. A photo-reducing machine is set to produce copies that are k times the height of the original ($k < 1$). Each time that a copy is produced, it is used as a new original to produce an even smaller copy. After **many** reductions, it is noted that the sum of the heights of an 8 cm original and **all** of its images is approaching 36 cm. The value of k correct to two decimal places is

A. 0.78
B. 0.67
C. 0.33
D. 0.22

24. The common ratio of the geometric sequence $-\frac{1}{6}, \frac{1}{3}, -\frac{2}{3}, \ldots$ is

A. 2

B. $\frac{1}{2}$

C. $-\frac{1}{2}$

D. -2

25. The $\lim_{n\to\infty}\left(\frac{2}{3}\right)^n$ is

A. 0
B. 1
C. ∞
D. nonexistent

26. The sum of n terms of an arithmetic series is 397.5. If the first and last terms of the series are 4 and 49 respectively, the number of terms in the series is

A. 8
B. 9
C. 14
D. 15

27. If $x - 2,\ 2x,\ y,\ \ldots$ is a geometric sequence with a common ratio of 3, then y equals

A. 36
B. 18
C. 12
D. 6

28. The scores $A, B, C, D, E, F,$ and G are listed in order of magnitude with A being the smallest. If A is decreased slightly and G increased by a large amount, then

A. the mean and median both increase
B. the mean and median both decrease
C. the mean is unchanged but the median increases
D. the mean increases but the median is unchanged

29. For a normal distribution with a mean of 30 and a standard deviation of 5, the probability of getting a value less than 20 or greater than 35 is

A. 0.8185
B. 0.4772
C. 0.3413
D. 0.1815

30. The results of a test are normally distributed with a standard deviation of 5. If 75.8% of the marks are less than 71, then the probability that a score selected at random is less than 61 is

A. 0.0228
B. 0.0968
C. 0.1210
D. 0.1290

31. Ken's collection of baseball cards consists of four cards from the Toronto Blue Jays, six cards from the Montreal Expos, and five cards from the New York Yankees. Of these, two cards feature a pitcher from Toronto, one card a pitcher from Montreal, and three cards a pitcher from New York. If one card is drawn randomly from the collection, the probability that it will feature a pitcher from a Canadian-based team is

A. $\frac{1}{5}$

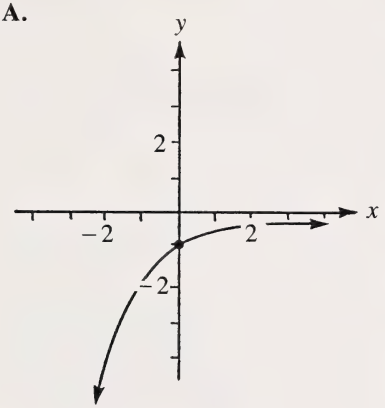
B. $\frac{3}{10}$

C. $\frac{3}{5}$

D. $\frac{2}{3}$

32. The sketch that best represents the graph of $y = \left(\frac{1}{2}\right)^x$ is

A.



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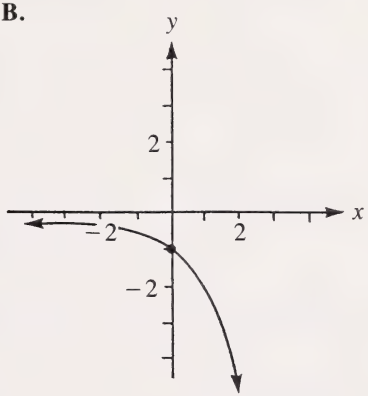
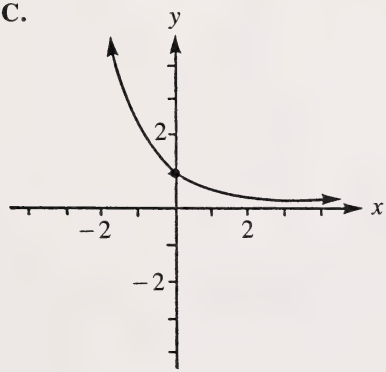
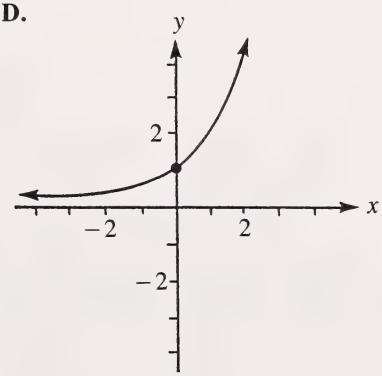


C.



D.



33. The solution to the equation $4^{2+3x} = 8^{1+x}$ is

A. 0

B. $-\frac{1}{3}$

C. $-\frac{1}{2}$

D. $-\frac{3}{5}$

34. If $3^x = 4$, then $\log_3(16)$ in terms of x is

A. 12^x

B. 3^{4x}

C. x^4

D. $2x$

35. In the equation $\log_x(4) = \frac{1}{3}$, the value of x is

A. 64

B. 12

C. $\frac{4}{3}$

D. $\frac{1}{16}$

36. Three first degree factors of $4x^3 + 16x^2 + 9x - 9$ are

A. $x + 1$, $2x + 9$, and $2x - 1$

B. $x + 3$, $2x - 3$, and $2x + 1$

C. $x + 3$, $2x + 3$, and $2x - 1$

D. $x - 9$, $2x + 1$, and $2x + 1$

Use the following information to answer question 37.

I. $x^3 + x^2 - 4x - 4$

II. $-x^3 - x^2 + 4x + 4$

III. $2x^3 + 2x^2 - 8x - 8$

IV. $3x^3 + 3x^2 - 12x - 12$

37. Which of the given polynomials will have the same zeros?

A. All of them
B. None of them
C. Only I and II
D. Only I, III, and IV

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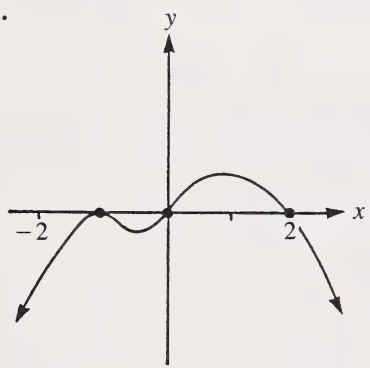
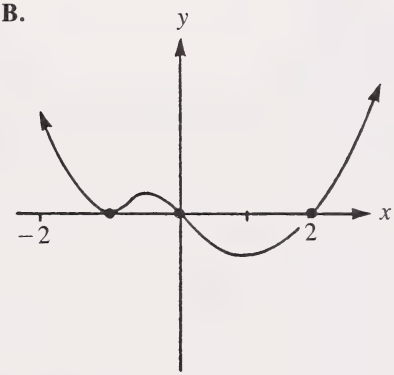
38. The graph of $y = -2x(x - 1)^2(x + 2)$ is

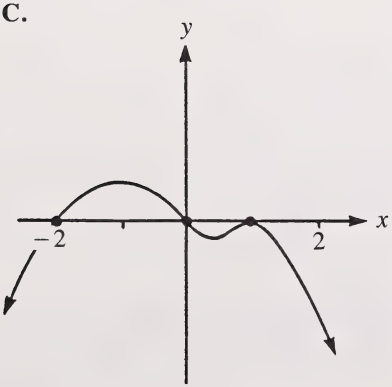
A.



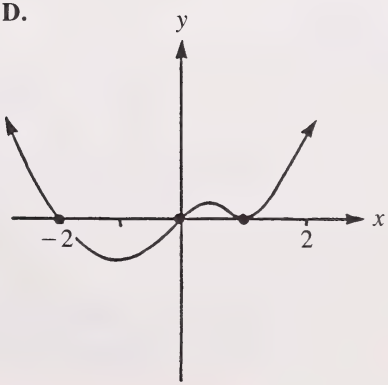
B.



C.



D.



39. If $x^3 - 2x^2 + 2x + k$ is divided by $x - 1$, the remainder is

A. k
B. $k + 1$
C. $k - 1$
D. $1 - k$

40. For the graph of $y = 3x^3 - 2x^2 - 7x - 2$, two of the x-intercepts are -1 and 2. The third x-intercept for this graph is

A. $\frac{5}{3}$

B. $\frac{2}{3}$

C. $\frac{1}{3}$

D. $-\frac{1}{3}$

YOU HAVE NOW COMPLETED THE MULTIPLE-CHOICE PART OF THE EXAMINATION. PROCEED DIRECTLY TO PART B.

PART B

INSTRUCTIONS

In this part of the examination, there are 12 machine-scorable open-ended questions each with a value of one mark. All numbers used in the questions are to be considered as **exact** numbers and are not the result of a measurement.

Read each question carefully.

Solve each question and write your answer correct to the nearest tenth.

Record your answer on the answer sheet provided by writing it in the boxes of the corresponding answer field and by filling in one circle in **every** column as illustrated. **Use an HB pencil only**.

Sample Questions and Solutions

1. If θ is acute and $\sin \theta = 0.6735$, then the measure of θ correct to the nearest tenth of a degree is _____ .

   $\theta = 42.33777464...°$

   RECORD 042.3

2. For the arithmetic series $-8 + (-5) + (-2) + \ldots + (85)$, the number of terms correct to the nearest tenth is _____ .

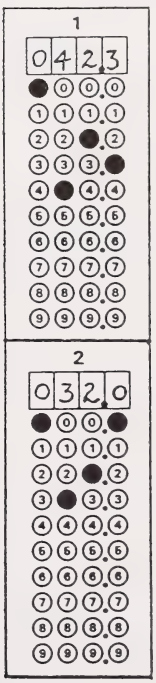
   $85 = -8 + (n - 1)(3)$

   $93 = 3n - 3$

   $n = 32$

   RECORD 032.0

Answer Sheet

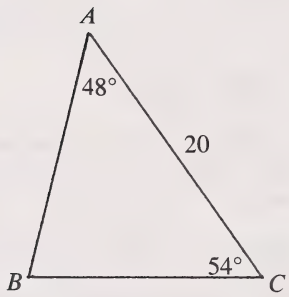


If you wish to change an answer, erase your first mark completely.

NOTE: The perforated pages at the back of this booklet may be torn out and used for your rough work. **No marks** will be given for work done on the tear-out pages.

START PART B IMMEDIATELY.

1. In the diagram at the right, the measure of BC correct to the nearest tenth is _____.



RECORD THE ANSWER ON THE ANSWER SHEET

2. If the solutions to $A \sin^2 \theta - B \sin \theta + 1 = 0,\ 0° < \theta \leqq 90°$ are 30° and 90°, then the value of B correct to the nearest tenth is _____.

RECORD THE ANSWER ON THE ANSWER SHEET

3. For the hyperbola $\frac{y^2}{16} - \frac{x^2}{36} = 1$, the distance from the origin to a focus correct to the nearest tenth is _____.

4. A circle passing through $A(5, -3)$ has its centre at $C(-2, 6)$. The length of the radius of this circle correct to the nearest tenth is _____.

RECORD THE ANSWER ON THE ANSWER SHEET

5. If $P(1, 10)$ is a point on an ellipse with foci $F_1(6, -2)$ and $F_2(-7, 4)$, then the distance between the vertices correct to the nearest tenth is _____.

RECORD THE ANSWER ON THE ANSWER SHEET

6. For the geometric series $81 + 27 + 9 + \ldots$, the sum correct to the nearest tenth is _____.

RECORD THE ANSWER ON THE ANSWER SHEET

7. If the nth term of an arithmetic series is $4n - 5$, then the sum of the first 12 terms correct to the nearest tenth is _____.

RECORD THE ANSWER ON THE ANSWER SHEET

8. The mean of a test is 65. If your z-score on this test is -1.6 and your actual score is 52, then the standard deviation for the test correct to the nearest tenth is _____.

RECORD THE ANSWER ON THE ANSWER SHEET

9. If $4^{2x} = 90$, then the value of x correct to the nearest tenth is _____.

RECORD THE ANSWER ON THE ANSWER SHEET

10. If $\log_{64}(x) = -\frac{1}{6}$, then the value of x correct to the nearest tenth is _____.

RECORD THE ANSWER ON THE ANSWER SHEET

11. If $x - c$ is a factor of $6x^3 + 3cx^2 - c^2x - 27$, then the value of c correct to the nearest tenth is _____.

RECORD THE ANSWER ON THE ANSWER SHEET

12. If $3x^3 - 25$ is divided by $x - 5$, the remainder correct to the nearest tenth is _____.

YOU HAVE NOW COMPLETED THE MACHINE-SCORABLE OPEN-ENDED PART OF THE EXAMINATION. PROCEED DIRECTLY TO PART C.

PART C

INSTRUCTIONS

In this part of the examination, there are three written-response questions for a total of 13 marks. All numbers used in the questions are to be considered as **exact** numbers and are not the result of a measurement.

Write your solutions in the examination booklet as neatly as possible.

Your solutions **must show all** pertinent explanations, calculations, and formulas. Full marks will be assigned **only** to those solutions that show **all** pertinent explanations, calculations, and formulas.

NOTE: The perforated pages at the back of this booklet may be torn out and used for your rough work. **No marks** will be given for work done on the tear-out pages.

START PART C IMMEDIATELY.

FOR DEPARTMENT USE ONLY

(4 marks)

1. A manufacturer of tennis balls tests his product by dropping the balls from a fixed height and measuring the height of the bounce. When 5000 balls were tested, the heights of the bounces were normally distributed with a mean of 60 cm and a standard deviation of 4 cm.

a) How many of the balls bounced less than 63 cm?

The number of balls was _____

b) Balls that did not reach a height of 55 cm were rejected. Correct to two decimal places, what percentage of the tested balls was rejected?

The percentage rejected was _____

FOR DEPARTMENT USE ONLY

2. Two straight roads cross at an angle of 49°. A car is parked on one of these roads 67 m from the intersection, and a truck is parked on the other road 152 m from the intersection.

(5 marks)

a) Draw a diagram that shows the positions of the vehicles and all given lengths and angles.

b) Find the **minimum** possible value for the distance between the car and the truck correct to the nearest tenth of a metre.

The minimum distance is _____ m

c) Find the **maximum** possible value for the distance between the car and the truck correct to the nearest tenth of a metre.

The maximum distance is _____ m

FOR DEPARTMENT USE ONLY

(4 marks)

3. Joyce is saving for a car by depositing \$150 monthly into a savings plan that pays interest at the rate of 9% per annum compounded monthly. She makes the deposit at the end of each month. Find the accumulated amount immediately following the 5th year correct to the nearest dollar.

The accumulated amount is _____

YOU HAVE NOW COMPLETED THE EXAMINATION. IF YOU HAVE TIME, YOU MAY WISH TO GO BACK AND CHECK YOUR ANSWERS.

MATHEMATICS 30
FORMULA SHEET

FOLD AND TEAR ALONG PERFORATION

I. Trigonometry

1. $\pi = 3.14159$
2. $\dfrac{a}{\sin A} = \dfrac{b}{\sin B} = \dfrac{c}{\sin C}$
3. $a^2 = b^2 + c^2 - 2bc \cos A$
4. $\sin^2 A + \cos^2 A = 1$
5. $1 + \tan^2 A = \sec^2 A$
6. $1 + \cot^2 A = \csc^2 A$
7. $\sin\left(\dfrac{\pi}{2} - \theta\right) = \cos\theta$
8. $\cos\left(\dfrac{\pi}{2} - \theta\right) = \sin\theta$
9. $\sin(A + B) = \sin A \cos B + \cos A \sin B$
10. $\sin(A - B) = \sin A \cos B - \cos A \sin B$
11. $\cos(A + B) = \cos A \cos B - \sin A \sin B$
12. $\cos(A - B) = \cos A \cos B + \sin A \sin B$
13. $\sin(-\theta) = -\sin\theta$
14. $\cos(-\theta) = \cos\theta$
15. $\tan(-\theta) = -\tan\theta$

II. Quadratic Relations

1. $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
2. $d = \dfrac{|Ax_1 + By_1 + C|}{\sqrt{A^2 + B^2}}$
3. $M\left(\dfrac{x_1 + x_2}{2}, \dfrac{y_1 + y_2}{2}\right)$
4. $(x - h)^2 + (y - k)^2 = r^2$
5. $x^2 + y^2 + Dx + Ey + F = 0$
6. $(y - k)^2 = 4p(x - h)$
7. $(x - h)^2 = 4p(y - k)$
8. $\dfrac{x^2}{a^2} + \dfrac{y^2}{b^2} = 1,\ a^2 = b^2 + c^2$
9. $\dfrac{y^2}{a^2} + \dfrac{x^2}{b^2} = 1,\ a^2 = b^2 + c^2$
10. $\dfrac{x^2}{a^2} - \dfrac{y^2}{b^2} = 1,\ c^2 = a^2 + b^2$
11. $\dfrac{y^2}{a^2} - \dfrac{x^2}{b^2} = 1,\ c^2 = a^2 + b^2$

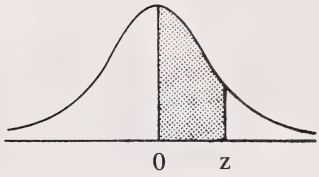
III. Sequences, Series, and Limits

1. $t_n = a + (n - 1)d$
2. $S_n = \dfrac{n(a + t_n)}{2}$
3. $S_n = \dfrac{n[2a + (n - 1)d]}{2}$
4. $A = P(1 + i)^n$
5. $t_n = ar^{n-1}$
6. $S_n = \dfrac{a(r^n - 1)}{r - 1}$
7. $S_n = \dfrac{rt_n - a}{r - 1}$
8. $S = \dfrac{a}{1 - r},\ -1 < r < 1$

IV. Statistics

1. $\mu = \dfrac{x_1 + x_2 + \ldots + x_n}{n}$
2. $\sigma = \sqrt{\dfrac{(x_1 - \mu)^2 + \ldots + (x_n - \mu)^2}{n}}$
3. $z = \dfrac{x - \mu}{\sigma}$

AREAS UNDER THE STANDARD NORMAL CURVE



z	0	1	2	3	4	5	6	7	8	9
0.0	0.0000	0.0040	0.0080	0.0120	0.0160	0.0199	0.0239	0.0279	0.0319	0.0359
0.1	0.0398	0.0438	0.0478	0.0517	0.0557	0.0596	0.0636	0.0675	0.0714	0.0754
0.2	0.0793	0.0832	0.0871	0.0910	0.0948	0.0987	0.1026	0.1064	0.1103	0.1141
0.3	0.1179	0.1217	0.1255	0.1293	0.1331	0.1368	0.1406	0.1443	0.1480	0.1517
0.4	0.1554	0.1591	0.1628	0.1664	0.1700	0.1736	0.1772	0.1808	0.1844	0.1879
0.5	0.1915	0.1950	0.1985	0.2019	0.2054	0.2088	0.2123	0.2157	0.2190	0.2224
0.6	0.2258	0.2291	0.2324	0.2357	0.2389	0.2422	0.2454	0.2486	0.2518	0.2549
0.7	0.2580	0.2612	0.2642	0.2673	0.2704	0.2734	0.2764	0.2794	0.2823	0.2852
0.8	0.2881	0.2910	0.2939	0.2967	0.2996	0.3023	0.3051	0.3078	0.3106	0.3133
0.9	0.3159	0.3186	0.3212	0.3238	0.3264	0.3289	0.3315	0.3340	0.3365	0.3389
1.0	0.3413	0.3438	0.3461	0.3485	0.3508	0.3531	0.3554	0.3577	0.3599	0.3621
1.1	0.3643	0.3665	0.3686	0.3708	0.3729	0.3749	0.3770	0.3790	0.3810	0.3830
1.2	0.3849	0.3869	0.3888	0.3907	0.3925	0.3944	0.3962	0.3980	0.3997	0.4015
1.3	0.4032	0.4049	0.4066	0.4082	0.4099	0.4115	0.4131	0.4147	0.4162	0.4177
1.4	0.4192	0.4207	0.4222	0.4236	0.4251	0.4265	0.4279	0.4292	0.4306	0.4319
1.5	0.4332	0.4345	0.4357	0.4370	0.4382	0.4394	0.4406	0.4418	0.4429	0.4441
1.6	0.4452	0.4463	0.4474	0.4484	0.4495	0.4505	0.4515	0.4525	0.4535	0.4545
1.7	0.4554	0.4564	0.4573	0.4582	0.4591	0.4599	0.4608	0.4616	0.4625	0.4633
1.8	0.4641	0.4649	0.4656	0.4664	0.4671	0.4678	0.4686	0.4693	0.4699	0.4706
1.9	0.4713	0.4719	0.4726	0.4732	0.4738	0.4744	0.4750	0.4756	0.4761	0.4767
2.0	0.4772	0.4778	0.4783	0.4788	0.4793	0.4798	0.4803	0.4808	0.4812	0.4817
2.1	0.4821	0.4826	0.4830	0.4834	0.4838	0.4842	0.4846	0.4850	0.4854	0.4857
2.2	0.4861	0.4864	0.4868	0.4871	0.4875	0.4878	0.4881	0.4884	0.4887	0.4890
2.3	0.4893	0.4896	0.4898	0.4901	0.4904	0.4906	0.4909	0.4911	0.4913	0.4916
2.4	0.4918	0.4920	0.4922	0.4925	0.4927	0.4929	0.4931	0.4932	0.4934	0.4936
2.5	0.4938	0.4940	0.4941	0.4943	0.4945	0.4946	0.4948	0.4949	0.4951	0.4952
2.6	0.4953	0.4955	0.4956	0.4957	0.4959	0.4960	0.4961	0.4962	0.4963	0.4964
2.7	0.4965	0.4966	0.4967	0.4968	0.4969	0.4970	0.4971	0.4972	0.4973	0.4974
2.8	0.4974	0.4975	0.4976	0.4977	0.4977	0.4978	0.4979	0.4979	0.4980	0.4981
2.9	0.4981	0.4982	0.4982	0.4983	0.4984	0.4984	0.4985	0.4985	0.4986	0.4986
3.0	0.4987	0.4987	0.4987	0.4988	0.4988	0.4989	0.4989	0.4989	0.4990	0.4990
3.1	0.4990	0.4991	0.4991	0.4991	0.4992	0.4992	0.4992	0.4992	0.4993	0.4993
3.2	0.4993	0.4993	0.4994	0.4994	0.4994	0.4994	0.4994	0.4995	0.4995	0.4995
3.3	0.4995	0.4995	0.4995	0.4996	0.4996	0.4996	0.4996	0.4996	0.4996	0.4997
3.4	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4998
3.5	0.4998	0.4998	0.4998	0.4998	0.4998	0.4998	0.4998	0.4998	0.4998	0.4998
3.6	0.4998	0.4998	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999
3.7	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999
3.8	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999
3.9	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000

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